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PIJCU, Vol. 3, No. 1, December 2025
Page 599-609

Revitalization of Javanese Language and Literature Through Digitalization of Short Stories (*Cerkak)* with the Novaja.id Application as an Effort to Strengthen the Preservation of Javanese Culture

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ABSTRACT

The creation of the Novaja.id application, which functions as a compilation of Javanese novels, this study attempts to address the declining interest in learning Javanese. The main objective of this research is to increase the interest of the younger generation in reading Javanese literature by developing an engaging and easy-to-understand platform. The System Development Life Cycle methodology and User-Centered Design (UCD) were used in this study. With a strong focus on user experience, this strategy ensures that the application is methodically built from the design stage to maintenance. Usability testing is integrated into the development process to gather user feedback, which is essential for improving the application interface. The results show that an application is successful if it has an intuitive interface and efficient search features. Usability testing shows a high level of user satisfaction and an increased desire to learn among users. Furthermore, Novaja.id has great potential to improve the reading skills of the younger generation and enhance Javanese language skills. It is hoped that the implementation of this application can help improve literacy in Indonesia and become a model for the development of other languages and cultures.

INTRODUCTION

There are a number of reasons why people are becoming less interested in studying Javanese. First, modernity and globalization can distract people from regional languages, such as Javanese, and make it more difficult for instructors and students to incorporate modernism into their lessons (Daniar et al., 2022). Learning Javanese might seem less relevant and necessary when Indonesian or other foreign languages are used in a variety of settings, such as the media and formal education. Second, a contributing issue may be the inadequate availability of creative educational materials and curriculum to support Javanese (Bilqis et al., 2023). The public's enthusiasm for studying Javanese may wane if the curriculum does not stress how important it is to comprehend and preserve the language. Additionally, interest in studying Javanese may be impacted by changes in lifestyles, which are often more urban and contemporary (Elika, 2024). More exposure to global pop culture may make people feel as though learning and utilizing Javanese is no longer important in their day-to-day interactions. Innovative methods that are applicable to daily life can be used to pique interest in learning Javanese (Tahyudin & Zidni Iman Sholihati, 2022).

Declining Javanese language literacy in the digital age is a critical issue that is addressed by the System Development Life Cycle (SDLC) and User-Centered Design (UCD). Along with the prevalence of Indonesian and other foreign languages in the digital sphere, interest in studying and utilizing Javanese as part of cultural heritage and custom is declining. It is anticipated that using an SDLC technique to construct Novaja.id would guarantee that the application will not only have dependable and stable operation but also be adaptable to changing technological demands and advancements. Novaja.id

PIJCU, Vol. 3, No. 1, December 2025
Page 599-609

long-term success depends on the SDLC's methodical structure for application design, development, testing, and maintenance. Meanwhile, the application of User-Centered Design in the development of Novaja.id emphasizes the importance of understanding user needs, preferences, and experiences at every stage of development. By focusing on users, it is hoped that this application will be more intuitive, easy to use, and can meet the expectations of Javanese-speaking users, thereby increasing their interest in reading Javanese novels (Christanto & Singgalen, 2023).

Numerous pertinent conclusions have been shown by earlier studies on Javanese literacy and the creation of related applications. The waning interest in reading Javanese has been brought to light by a number of studies that examine the public"s literacy levels in the language (Christian et al., 2023). In the meantime, studies on Javanese language applications stress the value of an intuitive user interface and interesting content. Even though a number of applications have been created, more study is required to create applications that integrate the User-Centered Design and System Development Life Cycle (SDLC) approaches in order to support Javanese literacy and reading interest in this digital age (Arif et al., 2022). Overall, the study"s backdrop highlights how urgent it is to combine the SDLC and User-Centered Design methodologies in order to construct the Javanese Novel Library application Novaja.id. Novaja.id is anticipated to be a creative solution that is not only technically sound but also pertinent to user requirements and expectations in tackling the issue of falling Javanese literacy in the face of cultural and technological developments. It is anticipated that this application will provide technological stability and dependability through the use of the SDLC technique, and that the User-Centered Design approach will result in an interface that meets the needs and preferences of the user. As a result, this study intends to positively impact cultural preservation and enhance Javanese language literacy in the digital age, all the while laying the groundwork for future development of related applications.

There are several planned and organized processes in the suggested problem-solving methodology for creating the Novaja.id Javanese Novel Library application. First, by using the System Development Life Cycle (SDLC) technique, this study may begin at any point from planning to maintenance, guaranteeing that every stage of the development of the Novaja.id application is completed on a regular basis. With an emphasis on application availability and dependability, these phases include user needs analysis, system design, implementation, testing, and maintenance. Additionally, to prioritize the best possible user experience, the User-Centered Design technique is used. Identifying possible user traits, getting user input throughout the development process, and tailoring the user interface to their requirements and preferences are all part of this step. It is possible to guarantee that Novaja.id has sufficient technological functionality and is also easily accessible and usable by Javanese speaking users by actively incorporating users throughout the development cycle (Laato et al., 2022). The goal of this strategy is to develop an application that is not only more technically advanced but also pertinent and user-friendly for Javanese speakers. It is intended that by integrating SDLC and User-Centered Design, this solution can help solve the difficulties encountered in this digital age, promote the preservation of local culture, and positively impact Javanese language literacy and reading interest.

As of right now, one area of technology that is still being updated is the creation of apps based on regional language literacy. Although a number of comparable apps have

PIJCU, Vol. 3, No. 1, December 2025
Page 599-609

surfaced with the intention of enhancing regional language literacy, the integration of development methodologies like User-Centered Design and the System Development Life Cycle (SDLC) is still limited. The sustainability of regional language use in the digital age has not been properly taken into account by some apps. In order to offer a more comprehensive solution, Novaja.id Javanese Novel Library combines a sound development technique with an emphasis on consumers (Maukar et al., 2023). This project is innovative since it takes a holistic approach to creating literacy apps in the Javanese language. Novaja.id is anticipated to reduce the chance of technological failure by using SDLC to create tested and robust apps. In contrast, the use of User-Centered Design prioritizes user demands, guarantees a user-friendly interface, and takes into account the preferences of users who speak Java. Because the primary focus is on the preservation of regional languages and literacy, Novaja.id is a creative contribution to initiatives aimed at preserving culture and boosting interest in reading among Javanese-speaking populations. It is believed that by introducing this innovation, the program would serve as a model for the creation of comparable solutions in a variety of different linguistic and cultural situations.

The planning and requirements analysis phase of the first year of the development roadmap for the Novaja.id Javanese Novel Library application, which spans 2022 to 2026, starts. Additionally, the User-Centered Design approach will be used in 2023 to complete the design stage of the Novaja.id system and user interface. The program will be implemented and tested in 2024, guaranteeing both technological dependability and favorable feedback from Javanese-speaking users. The maintenance phase, which includes regular updates, feature improvements, and resolving technological issues, will become the major focus in 2025. Furthermore, in 2026, efforts will be focused on measuring the impact of the application on the literacy and reading interest of the Javanese people. This roadmap reflects a commitment to providing sustainable and effective solutions in supporting the development of literacy and the preservation of Javanese culture. The details of the roadmap are as follows:

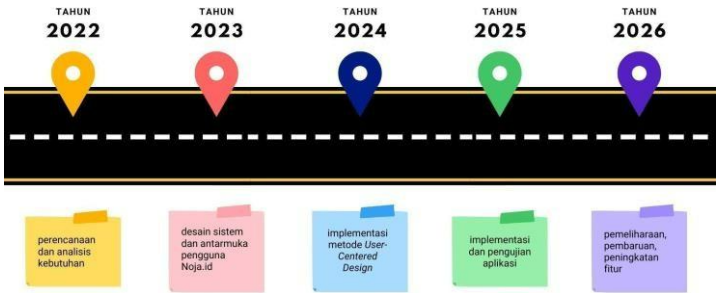

Figure 1. Novaja.id application development roadmap

To keep the conversation to a minimum, this study will concentrate on the main issue, which is: How should the Novaja.id application be created? Should the System Development Life Cycle (SDLC) methodology be applied to this Javanese Novel Library application in order to guarantee the best possible application availability, security, and dependability? How can the Novaja.id user interface be improved using the User-

PIJCU, Vol. 3, No. 1, December 2025
Page 599-609

Centered Design technique to better meet the requirements, preferences, and experience of Javanese language users? How might this increase users' interest in reading and literacy in Javanese?

RESEARCH METHOD

The System Development Life Cycle (SDLC) and User-Centered Design (UCD) methodologies were employed in this study. This strategy was used to guarantee that the Novaja.id application was created methodically, with an emphasis on user preferences and experience. In order to accomplish a number of important goals that support the development of Novaja.id the Javanese Novel Library application, the research location was concentrated in one place, specifically the Javanese Language Study Program, Faculty of Social and Political Sciences, UNNES, for the initial supporting data collection and testing, as well as the application implementation process. An application development strategy was created, and a requirements analysis was carried out as the first step in the research process. Based on user requirements and the study's goals, the research team created the features that would be included. The user interface and application flow were then designed during the design phase (Siregar & Melani, 2019). To provide the application with a visual representation, an early prototype was made. The application was constructed in accordance with the authorized design during the development stage. To make sure the program functioned properly across a range of devices, the developers made use of the newest technologies. The program was tested once development was finished to make sure all features worked as intended. Usability, security, and functionality testing were all part of this process. Following launch, the app will be continuously tracked and changed in response to user input. Features will be updated and improved on a regular basis by the research team.

Users are involved at every level of development in order to adopt the UCD strategy (Karunia, R. D. & Hidayati, 2025). UCD contributes to the creation of an interface that is easy to use, effective, and pleasurable by giving the user's viewpoint first priority (Han et al., 2022).

One of the tasks completed is gathering information about the requirements and expectations of users for the application. Testing sessions follow, during which users test the application and offer comments. This aids the team in finding problems and enhancing the user interface. Both quantitative and qualitative analyses are performed on the data gathered from user input and usability testing. The analysis's findings are used to assess user satisfaction levels and how well the application works to spark readers' interest in reading. The following research timetable was created to guarantee that the study is conducted more effectively. Users are involved at every level of development in order to adopt the UCD strategy (Karunia, R. D. & Hidayati, 2025). UCD contributes to the creation of an interface that is easy to use, effective, and pleasurable by giving the user's viewpoint first priority (Han et al., 2022). One of the tasks completed is gathering information about the requirements and expectations of users for the application. Testing sessions follow, during which users test the application and offer comments. This helped the team identify issues and improve the interface. Both quantitative and qualitative analyses were performed on the data gathered from user input and usability testing. The analysis's findings were applied to assess user happiness

PIJCU, Vol. 3, No. 1, December 2025
Page 599-609

and the app's capacity to stimulate readers' interest. The following research timeline was created in order to expedite the investigation:

RESULTS AND DISCUSSION

According to the survey's findings, customers require applications with rich, varied content, an intuitive UI, and ease of use. They also want a search function and the ability to group titles according to author and genre. The Novaja.id app was created to solve the issues with online resources that offer a collection of Javanese books. In light of the significance of conserving Javanese literature and language, Novaja.id seeks to serve as a readily available resource for the general public, particularly the younger generation, to help them comprehend and value literary works in their own tongue.

Project Extent

1. Creating a web application that is responsive and accessible from desktop and mobile devices.
2. Offering administration, classification, and search capabilities for new collections.
3. Including a content management system (CMS) to help administrators manage libraries.
4. Creation of a user interface that is simple to use and intuitive.
5. Features like reading bookmarks, novel suggestions, and reading history storage are available to registered users.

Resources Needed

1. Human Resources: A project manager, system analyst, web developer, UI/UX designer, and tester make up the development team.
2. Technologies: Databases (like MySQL), hosting servers, frameworks (like React and Laravel), programming languages (like HTML, CSS, JavaScript, PHP/Node.js), and frameworks.
3. Time: It is anticipated that the project, which includes all SDLC phases, will be finished in six months.

Requirements for Function

1. Novel Collection Management: The system has to have the capability to add, update, and remove Javanese books from a collection.
2. Search and Category: In addition to being able to access novels by genre, year of release, and other criteria, users must be able to search for novels by title, author, or certain keywords.
3. User maintenance: User registration, login, and profile maintenance must all be supported by the system. Additional features like reading history, reading bookmarks, and novel suggestions must be available to registered users.
4. User Interaction: Users must be able to share novels on social media and rate and review them.
5. Alerts and Updates: Users must be able to get alerts from the system regarding new developments or news pertaining to the library.
6. Security and Privacy: Both the copyright of the accessible novel material and the security of user data must be protected by the system.

PIJCU, Vol. 3, No. 1, December 2025
Page 599-609

Analysis of Users

1. Target Users: Anyone interested in Javanese literature, including students, college students, scholars, and members of the general public.
2. User Needs: Users must have simple access to a Javanese book collection with functionalities that facilitate reading, browsing, and realistically managing novels.

Personas of Users:

1. Persona 1: Students in high school who wish to study Javanese literature further for a class assignment.
2. Persona 2: Javanese literature majors in need of references for scholarly work.
3. Persona 3: Javanese book lovers seeking a site to locate both contemporary and historic Javanese literature.

2. Design of User Interfaces

Based on the UCD principle, the Novaja.id interface is designed to be user-friendly with clear navigation, contrasting colors, and easy-to-read typography. According to the persona created, students and college students with a reasonably good degree of digital literacy make up the bulk of users. Novaja.id has been designed based on the UserCentered Design (UCD) principle by considering the needs and preferences of the main users, namely students and college students. Some important aspects that have been implemented include:

1. Clear Navigation: Making sure users can quickly and easily locate the features or information they require.
2. Contrasting Colors: Choosing a color scheme that improves readability and visual comfort by making interface components simple to perceive and differentiate.
3. Easy-to-Read Typography: Selecting the right font size and type to guarantee that people can read the material easily.
4. User Persona: By concentrating on students and college students who possess a reasonable degree of digital literacy, the interface is made to accommodate their technological prowess while still being user-friendly and effective.

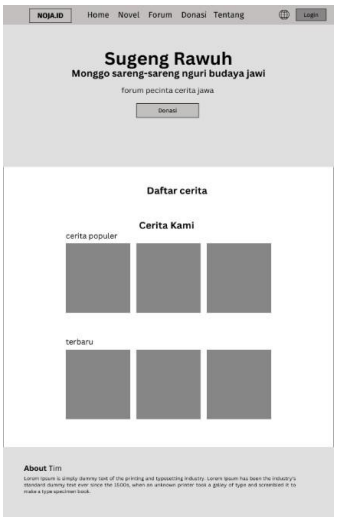

Figure 2. Novaja.id low-fidelity interface

PIJCU, Vol. 3, No. 1, December 2025
Page 599-609

An early sketch or basic prototype of a user interface (UI) design that is made with little detail and does not yet reflect the finished product is called a low-fidelity interface (Setiawan & Paramitha, 2023). Prior to devoting time and money to creating a more intricate, userfriendly, and superior design, the objective is to test fundamental ideas and concepts (Apik, 2025). These are some of the primary traits of an interface with poor fidelity. Rough blackand-white lines, simple geometric forms, and placeholder text are typically used in low-fidelity interfaces (Wijayanti et al., 2022). Details like colors, pictures, or intricate lettering are absent. Instead of focusing on aesthetics and images, this prototype prioritizes user flow, navigation, and element layout. Low-fidelity prototypes may be produced, altered, and tested rapidly due to their minimal time and effort requirements. Early on in the development process, lowfidelity interfaces are frequently used to gather input from stakeholders or users, allowing for significant modifications to be made at a minimal expense. Although low-fidelity prototyping can be done using software, many low-fidelity interfaces are made by hand with basic tools like paper and pencil. According to Andriani et al. (2021), a high-fidelity interface is a more realistic and detailed version of a user interface (UI) design that closely resembles the final product's look and feel. Low-fidelity prototypes are typically used to confirm the fundamental concept and structure before high-fidelity prototypes are produced.

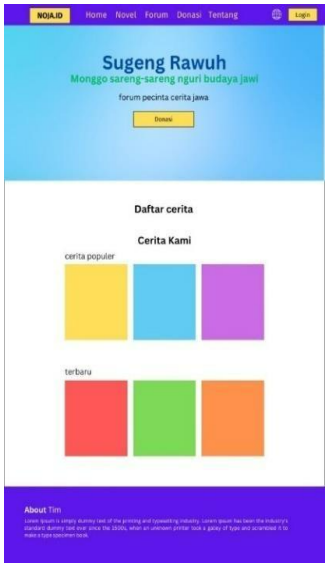

Figure 3. Novaja.id low-fidelity interface 3. Creation and Application

In order to make the program accessible on a variety of desktop and mobile devices, responsive web technology was used in its development (Andryadi, 2023). Core functionality, including search, category division, and user data storage, was successfully implemented, and the deployment process proceeded as scheduled. Without needing extensive technical or programming skills, application development through the use of a content management System (CMS) enables the effective generation and administration of digital content (Huda & Priyatna, 2019). One of the most well-known and extensively utilized Content Management Systems (CMS) worldwide, WordPress is used to create a wide range of online applications, from basic blogs to intricate e-commerce platforms.

PIJCU, Vol. 3, No. 1, December 2025
Page 599-609

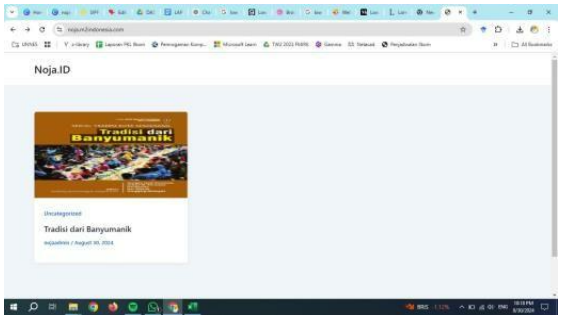

Figure 4. Novaja.id Application

4. Testing and Maintenance

Usability testing shows that most users are satisfied with the user interface and functionality of the application (Rahmat et al., 2021). Some minor issues found during testing, such as slightly long loading times on low-spec devices, have been fixed. User feedback will continue to be collected for the development of the next version. Blackbox testing is a software testing method in which the tester evaluates the functionality of an application without knowing the internal details, such as its source code or internal architecture (Pratama et al., 2023). This testing is for evaluation that focuses on the input and output of the application to ensure that the system functions according to specifications (Agung et al., 2025).

Table 1. Black-box testing aspects

Tested Aspects	Black-Box Testing Questions	Description
Input Validation	Does the system accept valid input and reject it if it is invalid?	Testing data validation, such as format, length, etc.
Basic Functions	Does feature X work according to specifications when used?	Testing whether core functions or features work normally.
Navigation	Do all links or buttons on the page function correctly?	Ensuring navigation within the application works properly.
Error Management	Does the system display informative error messages when errors occur?	Checking error handling and messages.
Boundary Conditions	Can the system handle input at maximum and minimum limits?	Testing how the system responds to extreme input.
UI Responsiveness	Does the user interface respond correctly to various actions?	Testing the speed and accuracy of UI responses.

PIJCU, Vol. 3, No. 1, December 2025
Page 599-609

Data Integrity	Does the entered data remain consistent across operations?	Ensuring no data is lost or corrupted.
Security	Does the system prevent unauthorized access to data or features?	Testing user authentication and authorization.
Conformance to Specification	Does the system behave according to specifications in all scenarios?	Verifying compliance with specification documents.
Session Management	Do user sessions end according to rules (e.g., automatic logout)?	Checking session management and related security.
Browser Compatibility	Does the application work correctly across browsers and versions?	Testing cross-platform compatibility.
Transaction Processing	Does the system process transactions accurately and consistently?	Testing payment functions, ordering, etc.
Resets features	Does the system reset or restore data to its original state correctly?	Testing password reset form resets, etc.
Response Time	Does the system respond within a reasonable time for all actions?	Checking loading times.
System Output	Is the output produced as expected?	Checking system outputs, such as reports, files, etc.

The Novaja.id application was successfully developed using the SDLC and UCD methodologies. While UCD makes sure that user needs and preferences are at the forefront of every step of development, SDLC guarantees a methodical development process from planning to maintenance.
Benefits:

1. Development success: The program was created effectively and with the functionality that users wanted. This demonstrates that the SDLC's implementation was successful in preserving the product's timeliness and quality.
2. Put users first: Usability testing findings show that the program is easier to use when UCD is used.

The application's user interface is simple and intuitive for users. The drawbacks are:

1. Time and resources: The iterative UCD process requires more time and resources, which can be a challenge if there are budget or time constraints.
2. Adaptation to feedback: The application needs to be continuously developed to adapt to changing user needs. Therefore, improvements and additions to features must be made periodically.

PIJCU, Vol. 3, No. 1, December 2025
Page 599-609

CONCLUSION

Both the technical and user experience outcomes of the Novaja.id application's development employing the SDLC and UCD approaches are satisfactory. When these two approaches are combined, the result is an application that not only works well but also satisfies user requirements and expectations. Therefore, it is anticipated that the Novaja.id application will aid in the preservation and dissemination of Javanese literature to a broader audience. It is advised that users remain involved in the UCD iterative process for future development in order to update application features and contribute to the unique collection. To increase accessibility and performance, a native mobile application version must also be taken into consideration.

REFERENCES

Apik, S. (2025). *Implementasi Metode Design Thinking Dalam Perancangan Ui/Ux Berbasis Mobile Pada Website Spegalan Apik*. *10*(1), 81–95.

Arif, E., Julianti, E., & Paulina Soko, I. (2022). Penerapan Konsep Internet of Things pada Pengembangan Aplikasi Portal Alumni di Universitas Terbuka. *Technomedia Journal*, 7(3), 303–313. https://doi.org/10.33050/tmj.v7i3.1915

Christanto, H. J., & Singgalen, Y. A. (2023). Analysis and Design of Student Guidance Information System through Software Development Life Cycle (SDLC) dan Waterfall Model. *Journal of Information Systems and Informatics*, *5*(1), 259–270. https://doi.org/10.51519/journalisi.v5i1.443

Christian, Y., Wibowo, T., & Agung Winata, P. (2023). KLIK: Kajian Ilmiah Informatika dan Komputer Perancangan Sistem E-Commerce Berbasis Web dengan Metode System

Development Life Cycle untuk Usaha Mikro Kecil dan Menengah Pakaian di Kota Batam. *Media Online*, *4*(3), 1271–1281. https://doi.org/10.30865/klik.v4i3.1408

Daniar, M. A., Soe"oed, R., & Hefni, A. (2022). Pengembangan Media Pembelajaran Berbasis

Aplikasi Game dalam Pembelajaran Bahasa Indonesia pada Siswa Kelas XI. *Diglosia: Jurnal Kajian Bahasa, Sastra, Dan Pengajarannya*, *5*(1), 71–82. https://doi.org/10.30872/diglosia.v5i1.332

Elika, N. (2024). *Metafora konseptual aksara Jawa dalam Serat Centhini: kajian linguistik kognitif Conceptual metaphor of Javanese characters in Serat Centhini: a cognitive linguistics study*. *7*, 431–444. https://diglosiaunmul.com/index.php/diglosia/article/view/1038

Han, Y., Ziebell, P., Riccio, A., & Halder, S. (2022). Two sides of the same coin: adaptation of

BCIs to internal states with user-centered design and electrophysiological features. *Brain-Computer Interfaces*, *9*(2), 102–114. https://doi.org/10.1080/2326263X.2022.2041294

Karunia, R. D. & Hidayati, N. (2025). *Analisis dan Pengembangan Sistem Informasi Kemahasiswaan Berbasis E-Letter dengan Menggunakan User Centered Design*. *14*(2), 2357–2386. https://doi.org/doi.org/10.33022/ijcs.v13i4.3755

Maukar, A. L., Kesuma, D. A., & Widodo, A. A. (2023). Application of Waterfall System Development Life Cycle Methodology for Designing Purchase Order Material Control

PIJCU, Vol. 3, No. 1, December 2025
Page 599-609

System. *Inform : Jurnal Ilmiah Bidang Teknologi Informasi Dan Komunikasi*, *8*(2), 102– 110. https://doi.org/10.25139/inform.v8i2.5138

Setiawan, I. K., & Paramitha, A. A. I. I. (2023). Prototype Mobile Application Menggunakan Metode Five Planes Pada Startup Mainheal. *JTKSI (Jurnal Teknologi Komputer Dan Sistem Informasi)*, *6*(3), 272–283.

Siregar, H. F., & Melani, M. (2019). Perancangan Aplikasi Komik Hadist Berbasis Multimedia. *Jurnal Teknologi Informasi*, *2*(2), 113. https://doi.org/10.36294/jurti.v2i2.425

Tahyudin, I., & Zidni Iman Sholihati. (2022). Pengembangan Aplikasi Tiga-Tingkat Menggunakan Metode Scrum pada Aplikasi Presensi Karyawan Glints Academy. *Jurnal RESTI (Rekayasa Sistem Dan Teknologi Informasi)*, *6*(1), 169–176. https://doi.org/10.29207/resti.v6i1.3793

Wijayanti, M. D., Az-zahra, H. M., & Wardhono, W. S. (2022). *Perancangan Tampilan Antarmuka Pengguna Aplikasi Web Praktik Kerja Industri (Prakerin) menggunakan Metode Design Thinking. (Studi Kasus : SMKN 2 Singosari)*. *6*(3), 1007–1017.